

REMARKS

Claims 1-11 are pending in the application. Claims 1 and 11 have been amended. Reconsideration of this application is respectfully requested.

It is noted with appreciation that the Office Action has indicated that claim 4 would be allowable if amended to incorporate the language of the base claim and any intervening claims.

The Office Action rejects claims 1 and 11 under the second paragraph of 35 U.S.C. 112 as indefinite because there is no proper antecedent basis for "the contact force (Fz)". Claims 1 and 11 have now been amended by changing the phrase to read "a contact force (Fz)". Claim 11 has also been amended to correct an antecedent issue by changing "the" to "a" at line 5. Accordingly, it is submitted that the rejection of claims 1 and 11 under the second paragraph of 35 U.S.C. 112 is rendered moot by the amendment.

The Office Action rejects claims 1-3, 5, 6, and 11 under 35 U.S.C. 102(b) anticipated by U.S. Patent No. 6,036,380 to Astroth et al., hereafter Astroth.

Claim 1 has been amended to recite that the first component can move relative to the second component in a direction of the length. Claim 11, without amendment, recites that the first and second attachment positions are displaceable in the direction of the length.

The inventors have recognized that the platen and base, being of different materials with different thermal coefficients of expansion, leads to substantial

distortion due to bending along the length direction (x), which is the direction of greater mass and/or contact of the platen and the base. This is shown, for example, in Fig. 1 of the present application. This results in an irregular or wavy platen surface that leads to printing distortion.

The inventors have solved this distortion problem by attaching the platen and base to one another at spaced positions in a manner that allows relative movement of the platen and base along the length direction (x). This is captured in claim 1 by the recitation that the first and second components are relatively fixed at a first position and that the first component is formed at the second position so that it can move relative the second component in a direction along the length. This is captured in claim 11 by the recitation that the first and second positions are relatively displaceable in a direction of the length. By allowing this motion, the irregular wavy surface is eliminated, thereby improving the uniformity of the printhead to medium distance along the entire printing axis, which allows a better control of the ink droplets placement error onto the medium and leads to an improved image quality.

In contrast, Astroth prevents expansion along the length (x) by fastening platen 30 and base 10 to one another by a plurality of closely spaced screws 45 and 46 placed along the front and rear of the platen. Thus, Astroth uses five front screws 45 closely spaced along the length (x) direction. This prevents relative movement along the length, thereby causing bending of platen 30 in the height (z) direction between adjacent screws 45. In other words, the length of platen 30 and base 10 remains the same, but the surface of platen 30 becomes irregular and wavy due to the bending thereof. The screws 45, by steadily fixing the platen 30 to the base 10, force the motion caused by thermal expansion to be in the height (z) direction rather than allowing relative motion along the length (x) direction. That is, Astroth does not solve the x direction distortion shown in Fig. 2 of the present application, but rather is an example of a printer that has such x direction distortion.

For the reason set forth above, it is submitted that the rejection of claims 1-11 under 35 U.S.C. 102(b) as anticipated by Astroth is erroneous and should be withdrawn.

The Office Action rejects claims 7-9 under 35 U.S.C 103(a) as unpatentable over Astroth

As noted above, Astroth lacks the relationship that the first component is formed so that it moves relative to the second component along the length direction.

For the reason set forth above, it is submitted that the rejection of claims 7-9 under 35 U.S.C. 103(a) is erroneous and should be withdrawn.

The Office Action rejects claim 10 under 35 U.S.C 103(a) as unpatentable over Astroth in view of U.S. Patent No. 6,196,672 to Ito et al., hereafter Ito.

As noted above, Astroth lacks the relationship that the first component is formed so that it moves relative to the second component along the length direction.

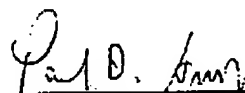
For the reason set forth above, it is submitted that the rejection of claim 10 under 35 U.S.C. 103(a) is erroneous and should be withdrawn.

It is respectfully requested for the reasons set forth above that the rejections under 35 U.S.C. 112, 35 U.S.C. 102(b) and 35 U.S.C. 103(a) be withdrawn, that claims 1-11 be allowed and that this application be passed to issue.

For the reasons set forth above, it is submitted that this amendment places the application in condition for allowance. Accordingly, it is respectfully requested that this application be allowed and passed to issue. If this amendment is deemed to not place the application in condition for allowance, it is respectfully requested that it be entered for the purpose of appeal.

Respectfully Submitted,

Date: 11-13-03



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Application S.N.J.

09/435,854

Filed:

August 23, 2003

Attorney Docket No.:

982,0047 USU

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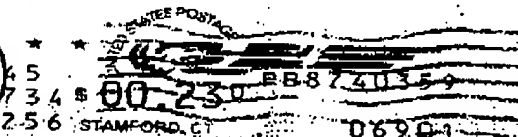
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